

**Faculty of Engineering and Technology**

**Computer Science Department**

**Comp438 – QA course**

**Course Main Project**

## Project Overview

**"End-to-End Testing and Quality Assurance for a Web or Mobile Application"**

### **Project Description**:

In this project, each group (3-4 members) will select a software application (either a web-based or mobile app, such as an open-source system or a project under development, or a comp4300 project) and will act as the QA (Quality Assurance) team responsible for the testing lifecycle. The objective is to apply the principles and tools learned throughout the course to ensure the quality, performance, and reliability of the application.

## Selection of Application under Test

Students should choose a suitable software application, Web or Mobile, and provide a brief justification for their choice.

**You need to get the approval of the selected application by your teacher before you proceed.**

The Project can be:

1. Open source web or mobile app **available with code**.
2. Comp4300 graduation project that is comprehensive and has complete features. In this case, if the project belongs to other students group, a formal approval must be provided by comp4300 group.

Ensure the application has multiple features and functionalities to test.

### **Project Objectives**:

* Conduct requirement analysis and identify functional and non-functional specifications: Analyze the documentation, user manuals, or any available resources to understand the functional and non-functional requirements of the selected software. [group work]
* Perform **static testing** through program/code inspections and reviews. [Each student should conduct at least program inspection for one main/core Class]
* Design and apply **black-box** (e.g., equivalence partitioning, boundary value analysis, decision tables) and **white-box** testing techniques (e.g., statement, branch, path coverage). [Each student should conduct at least 4 test cases stored on Jira Project]
* Create and execute **automated test scripts** using **Selenium** for functional testing. [Each student should have at least 3 automated tests]
* Conduct **performance and load testing** using **JMeter**, including designing test plans and analyzing results. [group work]
* Integrate the testing process into a **test management tool (e.g., Jira)** to plan, document, and track issues and test cases. [group work]
* Demonstrate understanding of **regression testing**, and evaluate the impact of changes on previous test cases. [group work]
* Submit a detailed **test plan document**, including traceability matrix, risk analysis, and test strategy. [group work]
* Deliver a final presentation with live demo (if possible) and lessons learned.

### **Deliverables**:

1. **Project Overview** (around 4 pages): Application description, requirements, scope of testing, responsibilities of each member.
2. **Test Plan Document**: Including types of testing, schedules, tools, risks, traceability matrix.
3. **Test Artifacts**:
   * Black-box and white-box test case designs.
   * Selenium scripts for automated testing.
   * JMeter test plans and result analysis.
   * Jira issues and test management reports.
4. Summary of all activities, test coverage analysis, challenges, improvements.

**Due date: Report submission is by 10/6/2025, as a reply to this message on Ritaj only.**

**Discussions and presentation will be held in the last week before final exams.**